

EXHIBIT 4

SABON INDUSTRIES, INC.

Leslie N. Wilder, P.E.

150 Jennie Lane • Fairfield, Connecticut 06824 • 203/255-8880

September 29, 2005

Jonathan E. Tobin
Finneran, Byrne & Dreschler, L.L.P.
50 Redfield Street
Boston, MA 02122

Re: Watson v. Electrolux

Dear Mr. Tobin,

Enclosed is my investigative report regarding the above matter. Enclosed also is a current CV describing my qualifications, my four-year testimony listing, and the following information, pursuant to Rule 26.

Compensation for my work in this matter is at the rate of \$350.00 per hour. If required, deposition testimony is at a rate of \$1400.00 per half-day (4 hours) or any part thereof, including travel, plus out-of-pocket or travel costs. Court testimony is at a rate of \$2800.00 per day or part thereof, including travel, plus any out-of-pocket or travel costs.

Within the last ten years I have published an article entitled Avoiding the Pitfalls of the Too-Obvious Defect in the Journal of the National Academy of Forensic Engineers, (174 Brady Avenue, Hawthorne, New York 10532) Volume XIV No. 2, December 1997.

In the event that I might have to further explain my opinions and reasoning as provided in my report, I might have to utilize or refer to reference items listed in the report, any underlying data, the exemplar of the subject saw, demonstrative equipment and/or other exemplar power tools or equipment.

Thank you for this opportunity to be of service.

Sincerely,

Leslie N. Wilder

Leslie N. Wilder, P.E. Four-Year Testimony List

<u>Case</u>	<u>Attorney</u>	<u>Depo</u>	<u>Trial</u>	<u>Note</u>	<u>Jurisdiction</u>
Nelson Lopez v Delta	Robert Baumgarten		4/18/2002		US District Court, Eastern District of NY
Varela v Hobart	Kenneth Berkowitz	5/4/2004			NJ Superior Ct, Hudson County HUD-L-1146-01
Pak Wai Li v. Liebert Corp. et al	Paul Brozdowski	6/15/2000	8/28/2002		US District Court, District of CT
Estate of David Young	Vincent Ciecka	5/19/2005			NJ Superior Court, Mercer Cty, Docket
Calvo v DoALL	Russell Jamison	3/30/2004	8/25/2005		US District Court, Eastern District of NY CV 01 1297
Cuozzo v. Atlantic Medical Imaging, et al	Eric Katz		1/15/2004		NJ Superior Ct, Middlesex Cty, New Brunswick
Leclerc v Scotchman Industries, Bewo	Ronald Kidd	11/20/2003			Hampden Superior Ct., MA - Civil Action 00-1121
Nardello v Borough of Naugatuck	Joseph Mengacci	8/5/2002			CT Superior Court, J.D. of Waterbury at Waterbury
Hassey v Silver Eagle	Andrew Mimnaugh	8/23/2001	12/12/2001		US Distr. Ct, District of NJ [Camden, NJ]
Goldberg v General Wire Spring Co.	Vincent Musto	10/6/1998	11/1/2001		CT Superior Ct JD of Fairfield at Bridgeport
Katherine Amyotte v Kaola Bear Kare,	Nancy Sachs	3/27/2002			CT Superior Ct JD of Stamford/Norwalk at Stamford
Maresca v Werner	Howard Suckle	8/27/2003			US District Ct, Southern District
Hemchandra Shertukde v Yard-Man	Mark Vidone	12/3/2003			US District Ct., District of CT #3:02CV620 (CFD)
Dudley v. Sears, Roebuck & Co.	William White		4/30/2002		NY Superior Court, Cty of Washington Index 7929D
McDermott v Ariens	Frank Zeccola	2/20/2001	12/5/2001		NY Supreme Court, Orange County
Castellucci v CMI	Jeffrey Zenna	10/11/2001			US District Court, District of New Jersey

H:

Notes:

9/28/2005

LESLIE N. WILDER, P.E.

203/255-8880

150 Jennie Lane • Fairfield, CT 06824

Professional: B.S. Mechanical Engineering - Columbia University 1956
M.S. Engineering Mechanics - Stanford University 1957
M.S. Electrical Engineering - New York University 1959
Licensed Professional Engineer - New York, California, Connecticut
Board Certified Diplomate Forensic Engineer
Board Certified Professional Ergonomist
Fourteen patents granted.

- National Academy of Forensic Engineers (Past President)
- American Society of Mechanical Engineers
- National Society of Professional Engineers
- Human Factors and Ergonomics Society
- Tau Beta Pi Engineering Honor Society
- American Society for Testing & Materials
- Society of Automotive Engineers
- International Society for Skiing Safety

Services:

- Product Liability Analysis
- Expert Testimony
- Accident Reconstruction
- Alternative Product Designs
- Engineering Consultation
- Product Testing

Expertise:

- Mechanical Engineering
- Electrical Engineering
- Human Factors/Ergonomics
- Cumulative Trauma Disorders
- Product design
- Failure analysis
- Safety
- Manufacturing

Product Knowledge: (partial)

- mowers and garden equipment
- snow throwers
- skis, boots and bindings
- bicycles
- sports and recreational products and equipment
- ladders, chairs and stools
- power and hand tools, shop equipment
- industrial and production machinery
- vehicles, seat belts and brakes
- automatic doors and mechanisms
- appliances, switches and electromechanical devices

Industry Experience:

1983- President
present **SABON INDUSTRIES, INC.** Fairfield, Connecticut
Designed and manufactured ergonomic computer accessories.
Consulting services in engineering, human factors, product development and marketing for Stanley Tools, ATT, and other industrial firms. Forensic consulting, product analyses and expert witness services for the legal profession and insurance industry.

LESLIE N. WILDER

page 2

1986-90	<u>Vice President and General Manager</u> THE HOPP PRESS, INC.	Newark, New Jersey
	Responsible for product development, manufacturing, sales, marketing, and administration. Products include product identification and pricing systems.	

1982-83	<u>Executive Vice President</u> <u>MECHTRONICS CORPORATION</u> Responsible for product development, manufacturing and administration for this manufacturer of specialized mechanical and electromechanical point-of-purchase displays.	Stamford, Connecticut
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1977-82 Director of Engineering, Leisure Products
AMF INCORPORATED White Plains, New York

Provided technical and business guidance to the \$1 billion leisure and electrical divisions. Responsible for product development, engineering and program analyses. Reviewed and monitored over 100 engineering and product development programs annually. Coordinated domestic and foreign technical resources. Staff engineering responsibility for:

- Lawn and Garden lawn mowers and tractors
- Wheel Goods bicycles and mopeds
- Tyrolia ski bindings
- Head tennis racquets and skis
- Potter and Brumfield relays and switches
- Paragon timers and circuit protectors
- American Athletic and Whitely exercise equipment
- Hatteras, Sunfish and other boats
- Harley Davidson motorcycles

1968-77	<u>Vice President Research and Development</u> <u>DICTAPHONE CORPORATION</u> Rye, New York Responsible for all new product development and other engineering activities. Established and managed the engineering and technical staff. In less than 5 years, new products developed accounted for 90% of profits.
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1965-68	<u>Manager of Research and Development ICORE INDUSTRIES</u> Engineering development responsibility for high speed, high precision, production-line inspection, weighing and control equipment. These products utilized mechanical, electronic and optical technologies and were used by companies such as General Mills and Proctor and Gamble. Sunnyvale, California
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1964-65 Research Specialist
AUTONETICS/NORTH AMERICAN AVIATION Anaheim, California
Planned, coordinated and scheduled complex avionics systems programs.

1957-64 Member of Technical Staff
BELL TELEPHONE LABORATORIES Murray Hill and Holmdel, New Jersey
 Designed mechanical, electromechanical and electronic devices and equipment.
 Developed and patented the Bell System TRIMLINE telephone.

Date: September 29, 2005
To: Jonathan E. Tobin
Finneran, Byrne & Dreschler, L.L.P.
50 Redfield Street
Boston, MA 02122

From: Leslie N. Wilder, P.E.
Sabon Industries, Inc.
150 Jennie Lane
Fairfield, CT 06430
203 255 8880

Subject: Michael Watson v. Electrolux Professional Outdoor Products

Summary of Investigation:

At your request, I have reviewed the information regarding Mr. Michael Watson's accidental injury involving a portable electric abrasive saw. This report summarizes my investigation, and in addition to any other information which may be referenced in this report, is based upon the following:

1. Inspection of a similar K2300 EL 12" exemplar saw
2. Copy of operating instructions for K2000 Mark II
3. 6 color copy photos and various photos on CD of a 2001 exemplar 14" K2300 saw
4. Deposition transcript and exhibits of Michael Watson, dated 8/4/05
5. Deposition transcript of Sven Gustafson and exhibits, dated 8/8/05
6. Copy of Partner K2300 EL Operator's Manual (108 88 09-70, 2001W05)
7. Copy of Partner K3000 EL Operator's Manual (1088897-26, 2003-08-26)
8. Copy of Partner Product Specification & Price List 2001
9. Copy of Partner K2300 EL 12" 1993-2000, K2300 EL-14" 1997-2000 Illustrated parts list (2000-05 CD and 108 30 01-12)
10. Copy of Partner K3000 Electric Spare Parts List (106 31 00-61)
11. Partner K3000 descriptive page from www.partner-industrial.com
12. Partner (Jonsereds Power Products) Safety Manual printed 1995
13. Review of Defendant's Answers to Plaintiff's First Set of Interrogatories
14. Review of Defendant's Response to Plaintiff's First Request for Production of Documents
15. Modern Continental's accident investigation file
16. Review of Suleyken Walker's letter dated 8/2/05 and accompanying exhibits
17. Various medical records and photos of the injury
18. 7 U.S. Patents regarding electric braking mechanisms for electric power tools

19. Code of Federal Regulations, Title 29, Subtitle B, Ch. XVII, Occupational Safety and Health Administration, Dept. of Labor (OSHA) 7/88 and later

Based upon this investigation, it is my conclusion that the subject saw was defectively designed and unreasonably dangerous in that it lacked a braking means to quickly slow the saw blade to a stop when the machine's switch was released.

This report, and the opinions and conclusions reached are based upon the information received by the writer to this date, and may be subject to modification should new or additional pertinent information be received.

It is for the sole use of the addressee for possible litigation in connection with this incident, and for no other purposes. All rights are reserved by Leslie N. Wilder, P.E., and Sabon Industries, Inc.

Background:

The plaintiff, Michael Watson, formerly of 39 Old Harbor Street, S. Boston, Massachusetts (DOB 8/15/70, 6-feet 1-inch tall, 175 pounds) had been employed at Modern Continental Construction of Cambridge Massachusetts since May 21 of 2001 as a laborer. On December 5 of that year, he was using a portable electric abrasive saw at a below grade worksite on the I-93 roadway to cut projecting steel reinforcing bars flush with a concrete wall from which they projected.

In general, based upon Mr. Watson's testimony (Reference 4, pp 94-104) the immediate events leading up to his injury are as follows: At one point, he was on the fifth or sixth rung of a ladder, cutting a rod to his left. As a right-handed person, he was using the saw with his left hand on the forward (loop) grip and his right hand on the rear handle. After cutting the rod, he released the trigger switch, repositioned his left hand on the loop handle, and confirmed that the rod had been cut flush with his right hand. He then readjusted the grip of his left hand on the saw for balance, and started down the ladder with his right hand on the right rail of the ladder. Upon reaching the bottom of the ladder, he transferred his grip on the saw to hold it with his left hand by the rear handle in order to more conveniently carry the saw. At some point in this process, the saw blade, which was still spinning (also referred to as coasting or coast down), contacted his left leg, causing laceration and nerve injuries below the knee.

Mr. Watson stated that he had used cutting saws in the past, and that he had used the subject saw over a period of perhaps three weeks to a month to cut hundreds of such rods on that jobsite prior to that date. On that date, except for a lunch break, he had worked from 7:00 AM to approximately 2:30 PM when he was injured. He described the work environment as noisy, and with work lights being used which created many shadows. He was wearing safety goggles and earplugs.

Description of Saw:

This subject K2300 EL saw is manufactured by the Partner subdivision of the Electrolux Professional Outdoor Products of Sweden, and was in production in the 1992-2003 time period. It consists essentially of an electrical motor driving a circular abrasive blade

through a gear reduction mechanism. The motor is housed such that it can be hand-held using two handles. The rear handle incorporates a spring loaded finger-operated motor switch which can be actuated when an interlock button is depressed. The forward handle is of a loop design. The motor's axis of rotation is generally fore and aft, and the blade rotation is at right angles to the motor axis and is such that the bottom of the blade rotates backwards toward the user. A semi-fixed guard surrounds the upper portion of the blade, and encompasses somewhat more than half the circumference of the blade. The rotational orientation of the guard is manually adjustable to minimize debris from flying back toward the operator. Neither the saw nor the operator's manual contained any warnings regarding the blade hazard due to coasting, as provided by some other saw manufacturers.

It is not clear whether the subject saw had a 12-inch or 14-inch diameter blade, both of which were offered by Partner, the two versions differing only in the diameter of the blade and the size of the guard. The saw is rated at 15 amperes at 120 volts AC and 4500 revolutions per minute.

The defendant indicated coast-down (stopping times after release of the trigger switch) of 10-12 seconds for the 12-inch EL 2300 (Walker, Reference 15) and 12-15 seconds for the 14-inch blade (Gustafson, Ref. 4, page 72, line 21). An exemplar 12-inch K2300 EL tested by this investigator was found to have a coast-down time of 12.7 seconds.

Discussion:

Unguarded spinning saw blades on power tools are certainly hazardous, as accidental bodily contact with a spinning blade can result in severe injuries. For this reason, it is appropriate to physically guard the blades to the maximum extent possible without compromising the tool's ability to perform its function. For example, retractable blade guards have been a standard feature on hand-held circular saws and on radial-arm and miter saws for many years. An additional approach to reducing the hazard of a spinning blade is to ensure that the blade slows to a stop quickly when the machine is turned off.

Because the blade guard on the subject saw does not completely cover the blade when the saw is withdrawn from the workpiece, it is especially important that the blade stops as quickly as possible.

Blade braking mechanisms have been offered on power saws for many years. Both mechanical and electrical braking means have been employed to accomplish this. Radial arm saws at least as far back as the 1960's have incorporated mechanical blade braking mechanisms to quickly stop the blade once power is shut off. It is common for miter saws and hand-held circular saws of more recent vintage to utilize electrical means to brake the motor to a stop. Such means, often referred to as dynamic braking, are based upon the concept of switching the electrical current paths within the motor circuitry so that the motor effectively becomes a generator under load, where electromagnetic fields are created that oppose continued rotation of the motor armature, causing the kinetic energy of the spinning motor to be rapidly dissipated. There have been many approaches to accomplishing this, as evidenced by the numerous extant designs and patents.

That these approaches are both economically and technically feasible are illustrated by the following examples:

About 10 years ago, Makita, a manufacturer of electric saws manufactured a model 5007NB-A circular saw which differed from their model 5007NB only in the addition of an electric brake feature, which served to bring the blade to a rapid stop when the trigger was released. At that time, the electric brake model retailed for approximately \$164 compared to approximately \$130 for the non-braked 5007NB

The construction of the two saws was almost identical, with only the brushes, switch, armature and field assemblies differing between the models. A replacement field assembly for the NB-A cost \$44.00, as compared to \$35.00 for the non-braked model, and the NB-A switch cost \$10.00 as compared to \$9.00 for the NB model. The costs of the brushes and armature were the same for both models. The cost difference between the two models, on a retail, parts replacement cost basis, was thus only \$10.00. Current Makita models 5007FAK and 5007FK (with and without blade brakes) retail for approximately \$127 and \$105, respectively, a similar small difference.

DeWalt, another well-known manufacturer of electrically operated tools offers the 120 volt, 15 ampere 5800 rpm model DW 369CSK 7 1/4 inch circular saw, as well as the identically specified DW368 model, which differs only in that the former includes electrical braking, while the latter does not. The saws retail for approximately \$129.99 and \$109.99, respectively. Assuming a ratio of approximately 3 or 4 to one between the retail price and manufacturing cost, the additional cost to manufacture the braked version is approximately \$5.00- \$7.00.

As another comparison, consider the current DeWalt model 708 4000 rpm 12-inch miter saw. This saw is also rated 15 amperes at 120 volts and provides dynamic braking.

This DeWalt is a larger, and significantly more complex device than the Partner saw. Each contains a motor and associated housing, an interlocked operator switch and power cord, blade mounting means, and an upper blade guard. Each has a cutting blade, with the Dewalt's carbide-tipped steel saw blade retailing for approximately \$55, compared with a 14-inch abrasive blade at approximately \$15. The Partner saw utilizes a gearbox, which the Dewalt does not, but the Dewalt has a large base, with two different angle adjustment mechanisms, a belt and two pulley drive mechanism, and adjustable and lockable fences. In addition, the Dewalt has an automatically retracting lower blade guard, a sawdust collector and a motor head slide mechanism. The DeWalt has many more parts and functions than the Partner saw. Yet it sells for approximately \$550-\$600, as compared with \$660 for the Partner K2300 EL.

A test of the DeWalt's stopping time was conducted by mounting two 10-inch steel blades on the DeWalt. The combined polar moment of inertia of the two blades, which weighed 3.03 pounds is approximately 6 percent greater than that of a 14-inch Partner abrasive blade. The DeWalt stopped the blades in less than 2 seconds.

In addition to Dewalt, other manufacturers of power tools, such as Delta and Ridgid, also offer miter saws of similar power, functionality size and price. They, too, provide blade brakes. For example, the Ridgid model MS1290LZ 15 ampere, 120 volt, 4000 rpm, 12-inch miter saw sells for \$569.00 and includes dynamic blade braking. Its Owner's Manual indicates a stopping time of less than 6 seconds, but actual testing of the saw revealed a blade stopping time of approximately 2.6 seconds. A test of a Delta Model 3260 12-inch miter saw showed a stopping time of less than 2 seconds with the blade brake enabled, and approximately 5 1/2 seconds under free coast down (mains power removed, trigger depressed).

The foregoing discussion and examples indicate that dynamic blade braking for electric saws in the \$130 - \$600 price range is practicable, inexpensive, and effective.

The concept of blade braking is not unique to power saws. For example, safety standards exist to restrict the time it takes for rotating impellers and augers on snow throwers and for the blades of power lawn mowers to stop once the operating controls have been released. Such products routinely meet these stopping time requirements.

Machine Safety and Accident Prevention:

The product safety hierarchy is well known: A product should first be designed to be non-hazardous. If this is not possible, then the hazards should be guarded against. If this is not feasible without compromising the product's utility, only then should warnings and/or training be used to reduce the risk.

Warnings are never a substitute for an inherently safe design, or one where hazards can be guarded against. The reason for this is simple. No matter how good the training or warnings, or how well intentioned the user, accidents can lead to an injury if an unguarded hazard exists.

Consistent with this, OSHA (Occupational Safety and Health Standards - 29 CFR, Part 1910) (Ref. 19) requires that all employee-operated machinery be guarded, as follows:

Subpart O: Machinery and Machine Guarding

Standard 1910.212: General requirements for all machines.

1910.212(a) Machine guarding.

1910.212(a)(1)

Types of guarding. One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.

In my opinion, the subject Partner saw does not comply with this safety requirement as it lacked sufficient means to reasonably protect the operator.

Conclusion:

It was foreseeable by the manufacturer that the K2300 EL would be used in an environment that might be sufficiently noisy to mask the coast down sound of a still-spinning blade, or that users would wear hearing protection. It was also foreseeable that the saw would be held and used in a variety of positions, passed from one hand to another as a user changed positions or moved from one location to another, and that, given the lack of a full mechanical blade guard, that the unguarded portion of the blade might inadvertently come into contact with a user's body during such maneuvers.


It is incumbent upon the manufacturer to provide protection against the known hazard of a spinning blade to the extent reasonably possible. Since braking of motor-driven tools is a well-known and commonly applied technique for reducing the hazards of such tools, Partner could and should have provided such a feature.

As previously noted, hazards should first be designed out of a machine, or guarded against. The K2300 EL incorporated neither effective guarding nor adequate operator safety warnings.

If the plaintiff had been using a saw equipped with either mechanical braking, or the electrical dynamic braking such as offered by Delta, DeWalt, Makita and Ridgid, the saw blade would have stopped or been going more slowly before it contacted the plaintiff's leg. This would have prevented or reduced the likelihood of injury. In the absence of a blade brake, operator warnings would have made the saw a safer device.

Because it was both technically and economically feasible to have had a blade brake on the K2300EL at the time of its manufacture, the lack of such a safety feature makes the design of the Partner K2300 EL defective and unreasonably dangerous.

To a reasonable degree of engineering certainty, it is my opinion that it is more likely than not that this defect was a proximate cause of this accident and injury.



Leslie N. Wilder, P.E.